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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,921	09/22/2003	Dusan Miljkovic	100700.0011US2	3331
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Rutan & Tucker, LLP. 611 ANTON BLVD SUITE 1400 COSTA MESA, CA 92626			EXAMINER BADR, HAMID R	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 06/23/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/668,921	<b>Applicant(s)</b> MILJKOVIC ET AL.	
	<b>Examiner</b> HAMID R. BADR	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant Amendments filed on 12/04/2006 is acknowledged. All outstanding rejections of record are overcome by applicant's amendment and arguments. New grounds of rejection are set forth below.

#### ***Election/Restrictions***

1. Applicant's election without traverse of Group I (claims 1-20) in the reply filed on 12/04/2006 is acknowledged.
2. Claim 21 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/04/2006.

Claims 1-20 are being considered on the merits.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 11 and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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3. Phrases using “comprising” are open ended and Markush group of elements should be recited in the alternative i.e. "comprising A, B, C, or D"; whereas phrases using “consisting of” are close ended and should recite the elements as “selected from the group consisting of A, B, C and D”. In claims 11 and 20, the phrase “at least one of ethanol and carbon dioxide” should recite the elements in the alternative, i.e. “at least one of ethanol or carbon dioxide”

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 8-9, and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Romanow et al. (1969, Effect of synthetic cytokinins on growth and pigment formation by *Rhodospirillum rubrum*; hereinafter R1, Examiner’s Translation)

6. R1 discloses the effect of synthetic cytokinins, kinetin and 6-benzyladenine on growth of *R. rubrum*. Both of cytokinins accelerated growth for at least 4 days with 6-benzyladenine having the greater effect (Abstract).

7. R1 discloses that a strain of *Rhodospirillum rubrum* develops very well without yeast extract in the presence of kinetin and 6-benzyladenine at  $10^{-5}$  to  $10^{-14}$  g/ml (page 243, Materials and Methods).

8. R1 teaches that the aerobic culture, in solid or liquid media, is incubated at 28C. The anaerobic culture is done in liquid medium in tubes at 25-30C under light of 2000 lux intensity. To compare the growth of cultures due to the action of different quantities of cytokinin, R1

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measures the absorption at 650 nm using a spectrophotometer. Spectral analysis of pigments of *Rhodospirillum* is performed by measuring absorption at 350-1000 nm by a live cell suspension. (page 244 paragraphs 1, 2, 3).

9. R1 observes the aerobic culture during 3 days for those samples with or without yeast extract and with kinetine or 6-benzyladenine at different concentrations. (page 244, Results, first paragraph). The culture on solid culture neither grew well nor produced pigments. The liquid cultures were studied after 4 and 7 days by measuring absorbance at 650 nm. After 4 days R1 observes a stimulation of growth of the microorganism by both kinetine and by 6-benzyl adenine (page 244 last paragraph to page 245 line 1). Photosynthetic cultures showed a stimulation of growth at all concentrations of cytokinines after 4 days (Page 245, last paragraph and Fig. 4 on page 246). R1 discusses that in the first few days, the cytokinins would stimulate growth of the organisms under study. R1 adds that the concentration of the bacterial chlorophyll and of carotenoids apparently depend on the number of cells (page 248, Discussion, first and second paragraphs).

10. Given that cytokinins stimulate growth, the activation of AMP-activated protein kinase of the microorganism or the increase in the uptake of a carbohydrate will be inherent in the stimulation process.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6-7, 10-13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romanow et al. (1969, Effect of synthetic cytokinins on growth and pigment formation by *Rhodospirillum rubrum*; hereinafter R1, Examiner's Translation) in view of Challice (1985, Purification of cytokinins on a polyvinylpyrrolidone column followed by analysis on a reversed phase C18ODS HPLC system).

13. R 1 disclosure is hereby incorporated by reference as outlined in paragraphs 6-10 above.

14. While R1 mentions that natural and synthetic cytokinins stimulate the cellular division (page 243, lines 3-4); it is silent regarding the plant source of cytokinin improving the growth and/or metabolism rate of microorganisms.

15. R2 teaches that cytokinins, as a class, can be separated from co-occurring phenolics by column chromatography using polyvinylpyrrolidone (PVP) with methanol as eluant. Subsequent fractionation of cytokinins may be achieved by HPLC. The separation system has been used to separate 2 unknown cytokinins from seedlings of *Hordeum vulgare* cv Steptoe (barley).

16. While the combined references teach the effect of cytokinins on *Rhodospirillum* for growth stimulation, it would be obvious to those skilled in the art that an organism such as *Saccharomyces* may be equally affected and as a result the processes involving *Saccharomyces* such as alcohol fermentation and bread dough leavening would benefit from this effect.

17. It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the teachings of R1 and replace the cytokinin source with barley extract containing cytokinin as taught by R2. One would do so to benefit from a plant source of cytokinin to improve the growth and/or metabolism rate of microorganisms which are important in industrial fermentations such as alcohol fermentation and bread dough leavening. Absent any

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evidence to contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success in using barley cytokinins to increase the growth and/or metabolism rate of microorganisms as presently claimed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-T 5:00 to 3:30 (Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R Badr  
Examiner  
Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794

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